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From:	adrian.alisie@celsius.network [adrian.alisie@celsius.network]
Sent:	2/2/2022 12:57:23 AM
To:	vanessa.joasaint@celsius.network
Subject:	Facts and Observations
Attachments:	Controls and Preliminary Program.docx

Hi Vanessa,

See some of the items I've captured and we will need to be included in our write up. Please think how to group them to make sense. I will also think how to best organize the information and get our observations across.

Thank you for your help… 😊.

Adrian

Facts:

1) Overall - Directional trading was a widespread practice before September 2021 and was known and accepted by senior management, including risk. It was presented and discussed in ExCo, ALCO, and RC and there is extensive supporting evidence.
2) Overall - Buy Limit orders were placed and not monitored. The trades were later filled and there were losses as the market moved even lower.
3) Other - Not all the trades were captured by the model managed by Kai. If a new trading strategy was approved but was not communicated to Kai, any related trades would not be captured by the limits monitoring model and the P&L.
4) Other - Additional trades placed in December were identified that was not initially captured by the P&L that might result in additional 15MM loss (Marked to Market)
5) Overall - There is no clear ownership on all the active trades we currently have out there (we don't even know all of them). There are trades out there that are currently bleeding money. We need ownership assigned to every existing trade and a review should be performed including understanding the position, the rationale, current earnings, etc.
6) Directional Trading 1 & 2 - In September, there were 2 Directional accounts created and directional trading was still allowed under these 2 strategies and within clear limits. However, it was restricted outside these 2 accounts.
7) Directional Trading 1 & 2 - There were losses in these 2 directional accounts (more extensive under Directional Trading 1) due to market fluctuations. However, there were limit britches which created significant losses as well as there was no stop loss placed on these trades or hedges.
8) Cash & Carry - Directional trades outside the approved trading strategies were still placed by timing the trades related to Cash and Carry strategies. The long trades were placed and the short future trade was not placed for a week to two weeks (instead to be placed within 48 hours). They compounded in bear market and result in significant losses.
9) Risk - Although directional trades were common practice, risk did not allow hedging these positions.
10) Future Funding - Directional trades were created by delaying the immediate rollover of the....
11) Exit strategies were not defined as part of our trading strategies (need to confirm)
12) Trading team is under staffed
13) Some of the trading instructions submitted by leadership were ignored or not received by the trading staff
14) Compensation model directly connected to the tactical trading activity may lead to unethical behavior.

Observations

15) Inadequate governance (including roles and responsibilities, communication, senior management intervention under stress, segregation of duties, clearly defined risk appetite is missing, ...
16) Inadequate technology – manual processes; mostly using Excel (missing portfolio management, risk and P&L systems)
17) Lack of Policies & Processes documentation clearly defining what is allowed and what not (including directional trading)
18) Inadequate control framework (only control in place is limit monitoring performed by finance; there should be 1st line trade surveillance in place covering daily/intra day trading activity, limits, outside mandates, cancel trades, amend trades). In addition, risk should monitor trade limit britches at the portfolio mevel through Value at Risk (VAR). Product control should reconcile the trading team P&L to the data pulled from the exchanges.

Remediation

Pre-Trade Risk Management

Pre-Trade Risk Limits—Trading firms should establish and automatically enforce pre-trade risk limits that are appropriate for the firms' capital base, clearing arrangements, trading style, experience, and risk tolerance. These risk limits can include a variety of hard limits, such as position size and order size. Depending on the trading strategy, these limits may be set at several levels of aggregation. These risk limits should be implemented in multiple independent pre-trade components of a trading system.

Price Collars—Trading systems should have upper and lower limits on the price of the orders they can send, configurable by product. They should prevent any order for a price outside of the "price collar" from leaving the system.

Volatility Awareness—Trading systems should take a specified action (have an alert, pause, or automatically disable) if an unusual price move or volume spike occurs during a specified timeframe.

Fat-Finger Quantity Limits—Trading systems should have upper limits on the size of the orders they can send, configurable by product. They should prevent any order for a quantity larger than the fat-finger limit from leaving the system.

Post-Execution and Back Office

Post-Trade Limits—Trading firms can also establish and automatically enforce post-trade risk limits that are appropriate for the firms' capital base, clearing arrangements, trading style, experience, and risk tolerance. For example, a trading firm can set daily loss-limits by instrument, asset class, and strategy and automatically close out or reduce positions if those limits are breached.

Order Fill Validity—Trading firms can monitor order fill messages they receive from the exchange in order to confirm they are valid. Validity can be determined by a number of trade specific factors including fill price, fill quantity, order ownership, or aggregate measures such as net positions and fill frequencies. Should an order fail these checks, action should be taken to investigate the discrepancy.

Near real-time reconciliation—ETSs should have functionality to accept drop-copies from exchanges and clearing firms. Drop copies are duplicate copies of orders that allow a firm to compare the exchange or clearing firm view of trades and positions with the systems' internal view. This helps to assure that all systems are performing as expected and maintaining accurate and consistent views of trades and positions. The drop-copy data may also be used by risk managers to view their firm's risk exposure independently of the trading system.

Risk Management:

Every organization should have a risk management function that is independent of its trading staff.

Every organization should have **a risk management policy** that is approved by the board of directors annually. The policy should outline products traded, parameters for risk activities, the limit structure, over-limit approval procedures, and frequency of review. In addition, every organization should have a process to periodically review limit policies, pricing assumptions, and model inputs under changing market conditions. In some markets, frequent, high-level review of such factors may be warranted.

Every organization should have a new-product policy that requires review and approval by all operational areas affected by such transactions(for example, risk management, credit management, trading, accounting, regulatory reporting, back office, audit, compliance, and legal). This policy should be evidenced by an audit trail of approvals before a new product is introduced.

Every organization should be able to aggregate each major type of risk on a single common basis, including market, credit, and operational risks. Ideally, risks would be evaluated within a value-at-risk framework to determine the overall level of risk to the institution. The risk-measurement system should also permit disaggregation of risk by type and by customer, instrument, or business unit to effectively support the management and control of risks.

Every organization should have a methodology to stress test the institution's portfolios with respect to key variables or events to create plausible worst-case scenarios for review by senior management. The limit structure of the institution should consider the results of the stress tests.

Every organization should have an integrated management information system that controls market risks and provides comprehensive reporting. The sophistication of the system should match the level of risk and complexity of trading activity. Every institution should have adequate financial applications in place to quantify and monitor risk positions and to process the variety of instruments currently in use. A minimum of manual intervention should be required to process and monitor transactions.

Risk management or the control function should be able to produce a risk-management report that highlights positions, limits, and excesses on a basis commensurate with trading activity. This report should be sent to senior management, reviewed, signed, and returned to control staff.

Counterparty credit exposure on derivative transactions should be measured on a replacement-cost and potential-exposure basis. Every organization should perform a periodic assessment of credit exposure to redefine statistical parameters used to derive potential exposure.

With regard to credit risk, any organization that employs netting should have a policy related to netting agreements. Appropriate legal inquiry should be conducted to determine enforceability by jurisdiction and counterparty type. Netting should be implemented only when legally enforceable.
Every organization should have middle and senior management inside and outside the trading room who are familiar with the stated philosophy on market and credit risk. Also, pricing methods employed by the traders should be well understood.

Every organization should be cognizant of nonquantifiable risks (such as operational risks), have an approach to assessing them, and have guidelines and trading practices to control them.

Every organization with a high level of trading activity should be able to demonstrate that it can adjust strategies and positions under rapidly changing market conditions and crisis situations on a timely basis.

For business lines with high levels of activity, risk management should be able to review exposures on an intraday basis.

Management information systems should provide sufficient reporting for decision making on market and credit risks, as well as operational data including profitability, unsettled items, and payments.

A periodic compliance review should be conducted to ensure conformity with federal, state, and foreign securities laws and regulatory guidelines.

Every institution should have a compensation system that does not create incentives which may conflict with maintaining the integrity of the risk-control system.

Auditors should perform a comprehensive review of risk management annually, emphasizing segregation of duties and validation of data integrity. Additional test work should be performed when numerous new products or models are introduced. Models used by both the front and back offices should be reassessed periodically to ensure sound results.

1) what were the sequence of events / decisions that led to the events / losses of last week (general timeline of activities, plus those specific to the losses),

2) who was accountable for what (responsible parties)

3) conclusions on factors contributing to what went wrong (such as no data availability/transparency issues, misunderstandings around mandate, incentive structures, governance etc).

Audit Review:

Obtain all the trading activity of the past month (January 1 through January 29)

	01/01/2022	01/08/2022	01/15/2022	
	01/07/2022	01/14/2022	01/21/2022	**Jan22 Monthly**
CnC (BTC & ETH)	$813,197	$111,037	-$189,314	**$734,920**
CnC (Alt Coins)	-$3,979,570	$1,077,182	-$3,416,276	**-$6,318,664**
Directional Trading 1	-$7,375,518	$2,380,175	-$11,978,437	**-$16,973,780**
Directional Trading 2	-$65,685	$61,222	-$409,943	**-$414,406**
Solana	$113,198	$196,441	-$1,339,390	**-$1,029,751**
Futures Funding	-$10,059,617	-$2,180,080	-$8,713,514	**-$20,953,211**
Total Revenues	-$20,553,995	$1,645,978	-$26,046,874	**-$44,954,891**

1st Line (Trading Desk):

1) Obtain 1st line related policies and procedures documentation. If nonexistent, discuss with process owners to understand existing processes and control framework.

2) Obtain all the related information to each trade including who initiated them, the rationale for every trade, execution, settlement, etc.

3) Perform design and operating effectiveness testing for the controls associated to this trades including level of authority, limits, approvals, reconciliations, etc..

4) Management reporting and escalations

5) Evaluate the processes and controls and ensure effectiveness

2nd Line (Risk Function):

1) Obtain 1st line related policies and procedures documentation. If nonexistent, discuss with process owners to understand existing processes and control framework.

2) Understand what controls Risk has in place and if these controls were effective from a design and operating effectiveness including:

   Pre Trade Risk Management:

   Pre-Trade Risk Limits
   Price Collars
   Fat-Finger Quantity Limits
   Kill Button

   Post-Execution and Back Office:
   Post-Trade Limits
   Order Fill Validity
   Near real-time reconciliation

3) Monitoring mechanisms
4) Management reporting and escalation

De-Risking our Portfolio:

We had a call with a large group on Sunday 7pm ET and decided on the following actions items:

- **C&C, FF** --- Remove any long exposures - **SCOTT to trade**

- **Team Directional** --- Close down completely, don't open new positions - **SCOTT to trade**

- **EFH Hedge** --- Reduce positions and sell 3000 BTC and 27400 ETH - **SCOTT to trade**

- **1INCH** --- Explore to sell more (over liquidity reserve requirements) - **PAUL to explore**

- **BADGER** --- Unstake current outright position and sell - **GERRIT to unstake, SCOTT to trade**

- **Mining Hedge** --- No action on either production in Mining Company nor valuation hedge on Parent Company

- **FireBlocks** --- ... missed the outcome on this one - **RONI can you confirm?**

- **Solana** --- Sell current long position (16k) - **RONI to ask Sabo to move from wallet, SCOTT to sell on exchange**

- **Upside Exposure** --- We can consider tactical position (short put-spread, long OTM call) - **RYAN to present the case**

- **GBTC** --- Standing instructions to start closing out current position once BTC < 30k (and discount is not unreasonable) - **PAUL to monitor and execute**

- **Resting Orders** --- Screen for any "good to cancel" resting orders on our exchanges and cancel - **SCOTT to check and execute**

- **Exchange Access** --- Explore which exchanges and OTC desks we can use - **SCOTT, DEAN, CONNOR, PAUL to connect**

- **MATIC**
  - Unstake additional coins to total 20 mln to sell - **RONI to start unstaking**
  - Explore using Perps to take the short position - **PAUL to explore**
  - Explore borrow market to get coins in - **DEAN to check**